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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/894,472 | 06/27/2001 | Yoshiyuki Kunito | 09812.0629-00000 | 5943 |

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| EXAMINER | |
|---|---|
| ABELSON, RONALD B | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2666 | |

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/894,472 | KUNITO ET AL. | |
| | Examiner | Art Unit | |
| | Ronald Abelson | 2666 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *12 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-12,15-20,23-26,29-32,35-37 and 39* is/are rejected.

7)☒ Claim(s) *5,6,13,14,21,22,27,28,33,34 and 38* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on *12/14/05, 4/8/03, and 6/27/01* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/12/2006 has been entered.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 17 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art 'AAPA' in view of Bouis (US 6,741,608).

Regarding claims 17 and 23, AAPA teaches a data transmission/reception apparatus (fig. 2 combination of boxes 205, 203a), for use in a network system (fig. 2) comprising a plurality of communication nodes (fig. 2 boxes 201, 203c,d, 202, 204, and unlabeled node directly above node 203c), for relaying data transmitted from a first communication node (fig. 2 box 201) and transmitting relayed data to a second communication node (fig. 2 box 203c). Note, the examiner corresponds the data converter (fig. 2 box 205) and communication node (fig. 2 box 203a) of AAPA as the data converter of the applicant since both could be co-located.

AAPA teaches a data reception means for receiving data transmitted from the first communication node (fig. 2 see arrow from box 201 to 205).

AAPA teaches a route control means for determining a communication route (fig. 2 box 205, format conversion from MPEG2 to MPEG4, thereafter, data transmitted through route R102, pg 3. lines 9-13).

AAPA teaches a transmission means for transmitting the data received by the reception means to a third communication node

(fig. 2 box 203c) based upon the format of the received data, and in accordance with the communication route determined by the route control means (fig. 2 box 205, format conversion from MPEG2 to MPEG4, thereafter, data transmitted through route R102, pg 3. lines 9-13).

Although AAPA teaches a route control means for determining a communication route and other communication nodes, AAPA is silent on the route is based on a format of the data received by the reception means, and/or a format conversion parameter associated with a type of format conversion of another communication node.

Bouis teaches the route is based on a format conversion parameter associated with a type of format conversion of another communication node ("least cost" path of streaming conversion modules, determine which path will produce the least cost, col. 6 lines 32-48). The examiner corresponds the applicant's communication nodes and format conversion parameter with the reference's streaming conversion modules and processing load incurred by the streaming conversion modules respectively.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of AAPA by choosing an optimal route for routing data based upon the cost of performing

data conversion along the paths from the source to the destination. Incorporating a least cost routing algorithm can perform this modification. The suggestion for the modification is to perform routing based upon the path will produce the least cost (Bouis: col. 6 lines 32-48).

4. Claims 1, 7, 8, 9, 15, 16, 29, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art 'AAPA' in view of Bouis (US 6,741,608) and further in view of Bremer (US 6,553,002).

Regarding claims 1, 9, and 29, AAPA teaches a data converter (fig. 2 combination of boxes 205, 203a) for use in a network system (fig. 2) comprised of a plurality of communication nodes (fig. 2 boxes 203c,d and unlabeled node directly above node 203c) in which data transmitted from a transmitter communication node (fig. 2 box 201) is received by a set of receiver communication nodes (fig. 2 boxes 203c,d and unlabeled node directly above node 203c). Note, the examiner corresponds the data converter (fig. 2 box 205) and communication node (fig. 2 box 203a) of AAPA as the data converter of the applicant since both could be co-located.

AAPA teaches a data reception means for receiving data transmitted from the transmitter communication node to a first receiver communication node (fig. 2 box 203a, communication route, pg. 3 lines 5-8), with the transmitted data being formatted in a first format (MPEG2, col. 3 lines 5-8).

AAPA teaches a format conversion means comprising at least one format converter (fig. 1 box 205) each used for converting a format of the transmitted data received by the reception means (fig. 2 box 205, conversion from MPEG2 to MPEG4, pg. 3 lines 9-11).

AAPA teaches a route control means for determining a route (fig. 2 box 205, format conversion from MPEG2 to MPEG4, thereafter, data transmitted through route R102, pg 3. lines 9-13).

AAPA teaches a transmission means for transmitting the data received by the reception means to a third communication node (fig. 2 box 203c) based upon the format of the received data, and in accordance with the communication route determined by the route control means (fig. 2 box 205, format conversion from

MPEG2 to MPEG4, thereafter, data transmitted through route R102, pg 3. lines 9-13).

Although AAPA teaches a route control means for determining a communication route and other communication nodes, AAPA is silent on the route is based on a format conversion performed by the format conversion means and format conversion performed by another communication node.

Bouis teaches the route is based on a format conversion parameter associated with a type of format conversion performed by the format conversion means and format conversion performed by another communication node ("least cost" path of streaming conversion modules, determine which path will produce the least cost, col. 6 lines 32-48). The examiner corresponds the applicant's communication nodes with the reference's streaming conversion modules.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of AAPA by choosing an optimal route for routing data based upon the cost of performing data conversion along the paths from the source to the destination. Incorporating a least cost routing algorithm can perform this modification. The suggestion for the modification

is to perform routing based upon the path will produce the least cost (Bouis: col. 6 lines 32-48).

The combination of AAPA and Bouis is silent on an information reception means for receiving a communication parameter associated with the plurality of communication nodes of the network system.

Bremer teaches an information reception means for receiving a communication parameter associated with the plurality of communication nodes of the network system (query neighboring routers, col. 4 lines 28-38).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA and Bouis by having the routers (fig. 2 box 203a,c,d) send queries to each other. This modification can be performed by following the teachings of Bremer. This would improve the system by permitting the routers to update their routing tables according to changing network conditions (Bremer: update entries in the route table, col. 4 lines 28-38).

Regarding claims 7, 15, and 35, as previously referenced, the route control means determines the communication route, based on information associated with a format of transmitted

data which can be transmitted from the transmitter communication node (Bouis: determines paths of streaming conversion modules that can convert from the ***source format*** to the destination format, col. 6 lines 32-48). The examiner corresponds the applicant's transmitter communication node with the reference's source.

Regarding claims 8, 16, and 36, as previously referenced, the route control means determines the communication route, based on information associated with a format of transmitted data which can be received by the receiver communication node (Bouis: determines paths of streaming conversion modules that can convert from the source format to the ***destination format***, col. 6 lines 32-48). The examiner corresponds the applicant's receiver communication node with the reference's destination.

5. Claims 2, 10 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of AAPA, Bouis, and Bremer as applied to claims 1, 9, and 29 above, and further in view of Ota (US 5,347,272).

The combination is silent on the route control means determines the communication route, based on information

associated with a communication distance between the communication nodes.

Ota teaches determining a communication route based on information associated with a communication distance between the communication nodes (fig. 8, col. 1 lines 12-40).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA, Bouis, and Bremer by having the end systems (AAPA: fig. 2 box 201, 202, 204) store the shortest routes. This can be accomplished by having the intermediate nodes (AAPA: fig. 2 box 203a,c,d) determine the shortest routes and broadcast this information to the end systems. This would improve the system by permitting the data to be transmitted efficiently over the shortest route.

6. Claims 3, 11, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of AAPA, Bouis, and Bremer as applied to claims 1, 9, and 29 respectively above, and further in view of Bremer.

Regarding claims 3, 11, and 31, the combination of AAPA, Bouis, and Bremer is silent on a route control means determines

a route based on a transmission delay between the communication nodes.

Bremer teaches a route control means determines a route based on a transmission delay between the communication nodes (Bremer: bottlenecks, congestion, col. 4 lines 35-38).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA, Bremer, and Bouis by performing routing based upon transmission delay. This modification can be performed according to the teachings of Bremer. This modification would benefit the system by minimizing the time required to route from source to destination.

7. Claims 4, 12, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of AAPA, Bouis, and Bremer as applied to claims 1, 9, and 29 above, and further in view of Watanabe (US 5,802,049).

Regarding claims 4, 12, and 32, the combination is silent on the route control means determines the communication route, based on information associated with a band used between the communication nodes.

Watanabe teaches a route control means determines the communication route, based on information associated with a band used between the communication nodes (largest possible free band, col. 3 lines 46-49).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA, Bouis, and Bremer by having the routers (AAPA: fig. 2 box 203a,c,d) select a route based upon the largest free bandwidth along the connection. This can be performed by having each router broadcast to the other routers the free bandwidth along its connections. This would improve the system by helping to ensure that the data will be transmitted along a path having sufficient bandwidth to prevent congestion.

8. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of AAPA, Bouis, and Bremer as applied to claim 29 above, and further in view of Finch (US 6,751,650).

Although AAPA teaches a communication node having a format conversion means (fig. 2 box 205), the combination is silent on a plurality of communication nodes having the format conversion means, wherein different types of format conversion processing are carried out by each of the format conversion means.

Finch teaches a plurality of communication nodes having the format conversion means, wherein different types of format conversion processing are carried out by each of the format conversion means (fig. 1 box 108, 112, col. 5 lines 53-57).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by having a plurality of communication nodes having the format conversion means, wherein different types of format conversion processing are carried out by each of the format conversion means. This can be accomplished by adding different types of format converters in the system. This would improve the system by allowing for the transfer of different types of data in the system. Note, in the system of AAPA (fig. 2) only MPEG2 and MPEG4 data may be processed.

9. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of AAPA, Bouis, and Bremer as applied to claim 29 above, and further in view of Bremer (US 6,032,190).

The combination is silent on the transmitter communication node or the receiver communication node can transmit/receive transmitting/transmitted data in a plurality of formats, the route control means obtains a route for every type of format,

and controls the transmitter communication node or the receiver communication node so as to transmit/receive the transmitting/transmitted data in any of the plurality of formats.

Bremer (US 6,032,190) teaches the transmitter communication node or the receiver communication node can transmit/receive transmitting/transmitted data in a plurality of formats, the route control means obtains a route for every type of format, and controls the transmitter communication node or the receiver communication node so as to transmit/receive the transmitting/transmitted data in any of the plurality of formats (fig. 2, col. 4 lines 51-64).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA, Bouis, and Bremer to modify the format converters (AAPA: fig. 2 box 205) to allow for a plurality of input/output protocols as shown by Bremer (US 6,032,190). This would improve the system by allowing the network to work for a wider variety of protocols.

10. Claims 18 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of AAPA and Bouis as

applied to claims 17 and 23 above, and further in view of Ota (US 5,347,272).

The combination of AAPA and Bouis is silent on the route control means determines the communication route, based on information associated with a communication distance between the communication nodes.

Ota teaches determining a communication route based on information concerning a communication distance between the communication nodes (fig. 8, col. 1 lines 12-40).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA and Bouis by having the end systems (AAPA: fig. 2 box 201, 202, 204) store the shortest routes. This can be accomplished by having the intermediate nodes (AAPA: fig. 2 box 203a,c,d) determine the shortest routes and broadcast this information to the end systems. This would improve the system by permitting the data to be transmitted efficiently over the shortest route.

11. Claims 19 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of AAPA and Bouis as applied to claims 17 and 23 respectively above, and further in view of Bremer.

The combination of AAPA and Bouis is silent on a route control means determines a route based on a transmission delay between the communication nodes.

Bremer teaches a route control means determines a route based on a transmission delay between the communication nodes (Bremer: bottlenecks, congestion, col. 4 lines 35-38).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA and Bouis by performing routing based upon transmission delay. This modification can be performed according to the teachings of Bremer. This modification would benefit the system by minimizing the time required to route from source to destination.

12. Claims 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of AAPA and Bouis as applied to claims 17 and 23 above, and further in view of Watanabe (US 5,802,049).

Regarding claims 20 and 26, the combination of AAPA and Bouis is silent on the route control means determines the communication route, based on information associated with a band used between the communication nodes.

Watanabe teaches a route control means determines the communication route, based on information associated with a band used between the communication nodes (largest possible free band, col. 3 lines 46-49).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA and Bouis by having the routers (AAPA: fig. 2 box 203a,c,d) select a route based upon the largest free bandwidth along the connection. This can be performed by having each router broadcast to the other routers the free bandwidth along its connections. This would improve the system by helping to ensure that the data will be transmitted along a path having sufficient bandwidth to prevent congestion.

***Allowable Subject Matter***

13. Claims 5, 6, 13, 14, 21, 22, 27, 28, 33, 34, and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

14. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (571) 272-3165. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ronald Abelson
Examiner
Art Unit 2666

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CHI PHAM
SUPERVISORY PATENT EXAMINER
2/2/06